	Mean temperature.	Mean maximum.	Mean minimum.
	° F.	° F.	° F.
April, 1906	67.7	75.8	59.6
Average for previous 47 years	64.7	70.9	58.3
Excess of 1906 over average for previous 47 years	3.0	4.9	1.3

Unseasonably high temperatures for this month have also been experienced in the other Australian states; and we have noticed by the cablegrams published in the Sydney daily papers that a similar heat visitation was experienced in parts of Great Britain about the same time as our heat wave here, above noted.

SEVERE HAILSTORM IN THE GULF OF MEXICO.

By Mr. R. G. BINDLEY.[1]

[Communicated by Mr. JAMES PAGE, Chief of Division of Ocean Meteorology.]

Whilst crossing the Gulf of Mexico, during the night of March 17 and morning of the 18th, in latitude 28° 48′ N., and longitude 93° 47′ W., we experienced a heavy thunderstorm, and during the height of the storm a hail squall of exceeding violence crossed the vessel. At 8 p. m. the wind was east 5;[2] the sky was overcast with strato-cumulus clouds and a slight haze existed; occasionally a flash of sheet lightning was seen. At 9 p. m. the haze grew slightly denser, being able to see only about two miles, and the clouds were broken in places so that we could discern the stars at intervals. This state continued until 11:30 p. m., when we noticed that the electric storm was advancing toward us; the sheet lightning was flashing more frequently, and the distant rumble of thunder could be heard. The sky had again become completely overcast, and heavy showers of rain began to fall.

At midnight the sheet lightning was almost one continuous flash, with only a second's interval between flashes; occasionally the sky was lighted vividly for three or four minutes at a time. At 0:15 a. m. the first flash of forked lightning was observed in the southeast. The storm approached rapidly and struck the ship at about 0:35 to 0:45 a. m., during which time a most severe and dangerous hail squall crossed the vessel. Its approach was heralded by the loud hissing sound, which generally precedes the heavy squalls, caused by the hailstones striking the water.

When the squall struck the ship the stones were about the size of walnuts, but in the center of the squall they were lumps of ice equal in size to large oranges; some picked up afterwards were two and one-half inches in diameter.

During the squall the ship was stopped and the officer of the watch and helmsman were compelled to seek shelter. The first officer sustained a severe bruise, caused by a stone striking the back of his neck, and the helmsman received a scalp wound from the same cause. These stones fell with such force as to dent the binnacles in several places and chip the paint off rails and other painted surfaces. During the night the barometer was steady at 30.03 (corrected of error); the thermometer at 64° F.; the temperature of the sea surface being 64° to 65° F. After the hail heavy rain set in and lasted until 6 a. m., when the weather generally cleared.

THE SEICHE AND ITS MECHANICAL EXPLANATION.

Prof. Dr. H. Ebert, of Munich, gives the following summary of the extensive memoir on the theory of seiches by Professor Chrystal, published in the Transactions of the Royal Society of Edinburgh, during 1905, with a general abstract in the proceedings of the same society.

[1] Mr. Bindley was an officer of the British S. S. *Jamaican*, Captain Robb, bound from Galveston to Liverpool, at the time when this storm was encountered.

[2] That is, the force of the wind was 5 on the Beaufort scale.—EDITOR.

After a condensed review of the development of the study of seiches, and a very complete bibliography of the subject, Professor Chrystal gives a condensed statement of the results of his own research, which includes the description of a beautiful model made for the study of seiche oscillations in a rectangular trough, built for that purpose, near Wedderburn, Scotland. He passes then to the second part of his work, which consists of a general theory, now for the first time completely developed, of small longitudinal seiches in lake basins having variable depths and cross sections. An idea of this mathematical theory may be derived from the following statement. The horizontal velocities and accelerations for any particle of water, as also the vertical movements, are expressed as differential functions of a special auxiliary quantity v. The solution of these equations is expressed as a sine and cosine, or Fourier, series, whose coefficients, P, again depend upon the same auxiliary quantity, v. Thus the problem of the seiche, in its most general form, is reduced to that of a vibrating cord, fastened at both ends, and for which the ratio of the tension to the mass, per unit of length, depends upon the same auxiliary quantity, v. In conclusion Doctor Bruner states that the general results of the computations by Professor Chrystal's formula were compared with the formula of Dubois, which is the only rule according to which we have hitherto been able to compute the periodic time of oscillation of the seiche when we know the dimensions of the lake. The result of the comparison shows that the formula of Dubois gives results too large in lakes with concave sides, and too small in lakes with convex sides, but this purely empirical formula in many cases gives a good first approximation. Through this thorough theoretical investigation by Professor Chrystal the study of seiches will certainly receive abundant stimulus.

C. A.

METEOROLOGY IN GERMAN UNIVERSITIES.

The Physikalische Zeitschrift for April 15, 1906, gives quite a complete list of the courses of scientific lectures in German speaking universities in Europe, for the summer term, 1906, from which we select the following list of lectures that specifically touch upon meteorology or climatology. The figures given after each title indicate the number of lectures per week; these are, of course, additional to the hours of laboratory practise, since these lectures correspond to our post graduate courses for attaining the degree Ph. D.

Aachen (Aix-la-Chapelle) University.—Professor Polis: Climatology 2; special topics in meteorology 1; technical meteorology 1.

Berlin University.—Professor Börnstein: The weather and the prediction of the weather, 1. Professor von Bezold: Statics and dynamics of the atmosphere, 2; practical meteorological work for beginners, 3; same, for advanced students, 2; meteorological conferences, 1. Professor Hellmann: Introduction to meteorology, instrumental, observational, and historical, 2; practical climatology, 1. Professor Less: Introduction to climatology, 1; special weather phenomena, 1.

Berlin Technical High School.—Professor Cassner: Introduction to the theory of highs and lows in meteorology.

Breslau University.—Professor von der Borne: Physics of the atmosphere of the earth, 2; geophysical conferences and exercises, occasional.

Göttingen University.—Professor Wiechert: Terrestrial magnetism, 2; aurora, 1; work in geophysics, 1.

Gratz University.—Professor Benndorff: Theoretical meteorology, 3; practise in physical computations, 2.

Greifswald University.—Professor Holtz: Meteorology, including optical phenomena, 1; physics of the earth with experiments, 1.

Halle University.—Professor Buchholtz: Theory of atmospheric refraction, etc., 3.

Heidelberg University.—Professor Pockels: Introduction to theoretical physics, 3; geophysics, 1. Professor Wolf: Meteorology, 2.

Innsbruck University.—Professor Trabert: Cosmical physics, 2; elements of climatology, 1; meteorological work, 2.

Karlsruhe Technical High School. —Professor Schultheiss: Synoptic meteorology with practise, 1.

Prague University.—Professor Spitaler: Astrophysics, 2; terrestrial magnetism, 2.